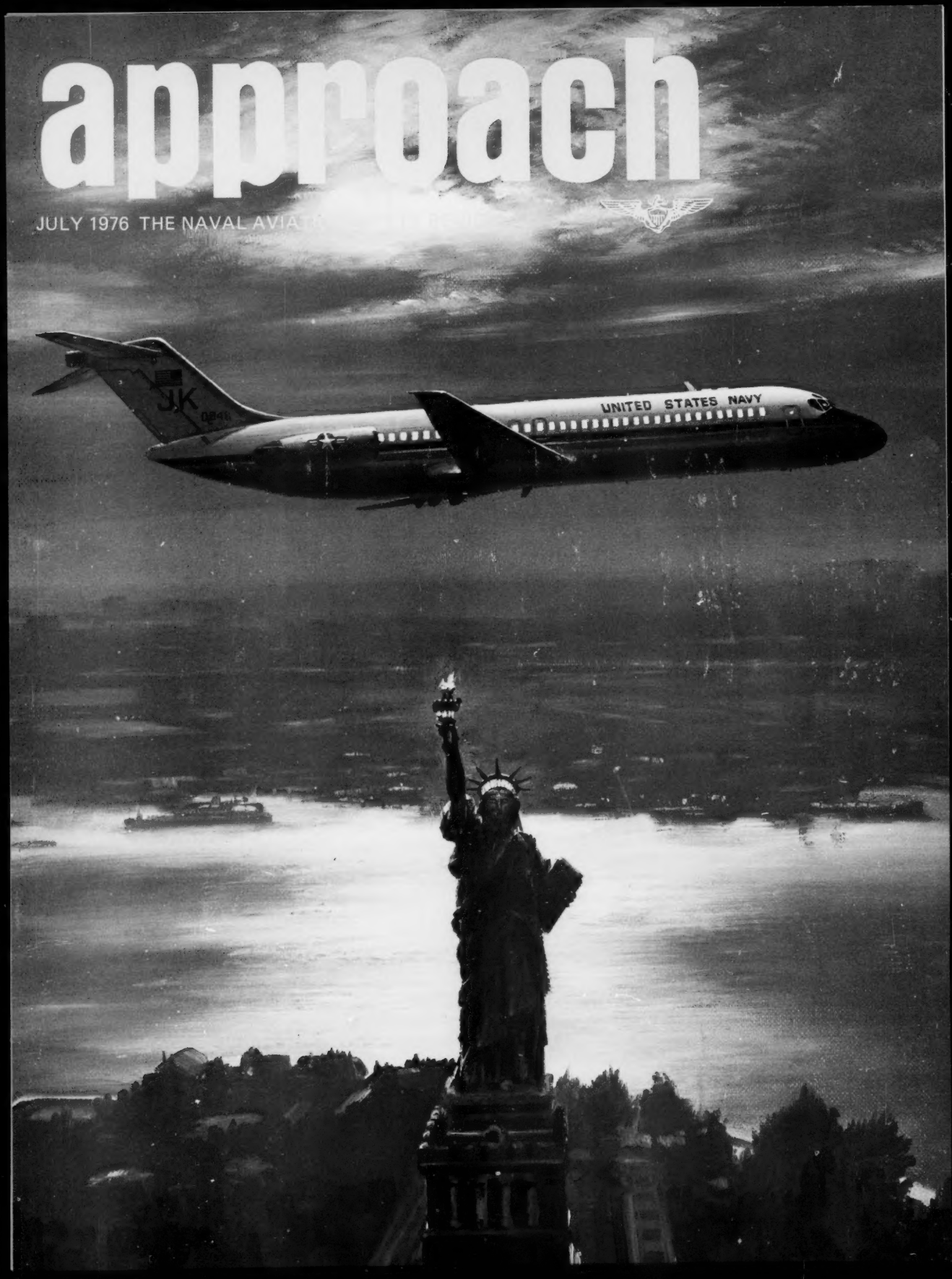
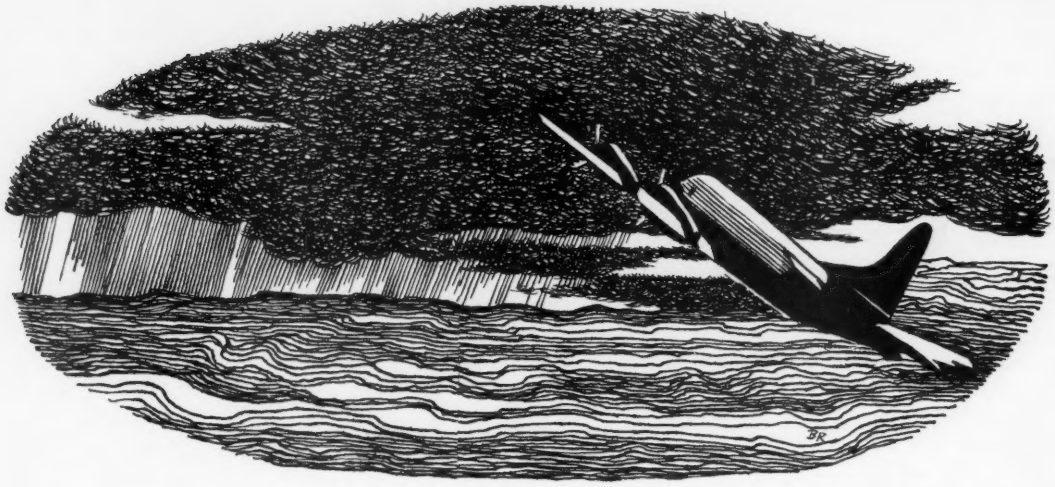
approach

JULY 1976 THE NAVAL AVIA



Numerology buffs, try this for size. In the Navy's 200th year, VP-22, attached to COMPATWING 2 and operating for Commander Task Force 72 as Commander Task Group 72.2, has completed over 182,000 flight hours in . . .

22 accident-free years



WHENEVER a squadron reaches a milestone such as this, there are many folks who become downright curious about how it was accomplished. The safety record for the VP-22 *Blue Geese* began 19 November 1953. That day, one of their P2V-5 aircraft received a damaged vertical stabilizer which had to be changed after a .50-caliber projectile cooked off in a barrel of the crown turret. The accident occurred when an experienced aircrewman didn't follow prescribed procedures.

Since then – to borrow a phrase attributed to a major U.S. automobile manufacturer – they "must be doing something right." Otherwise, how has VP-22 been able to maintain such an enviable safety record? They are No. 1 in the Navy's safety arena and one of the safest squadrons of all time in the military.

On the anniversary of their 21st accident-free year, the CO, CDR W. L. Rice, commented that the squadron had just returned from a rigorous deployment. The members were cocky, experienced, proud of their achievements, and knew that they were good. The CO sensed a little laxness – not enough to scream about, not enough to put a finger on, but enough to make the small hairs on the back of his neck feel funny. He realized that they were becoming a little bit complacent. And, he added, a little bit complacent is like a little bit pregnant – it would be only a matter of time before giving birth to something.

He called in his department heads, and plans were made to "put the train back on the tracks." The situation was turned around – pleasing to the "heavies" – but the juniors weren't convinced that there had ever been a problem. So, the CO decided to give the command the next best thing to real experience – a *vicarious* experience.

Few people had ever been around when an accident took

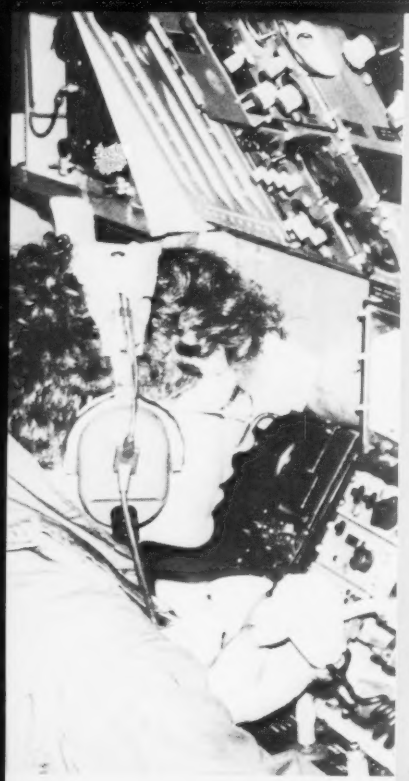
place. An accident causes a command to look more deeply into itself than at any other time. Those who have lived through it know that afterward you remain more alert, are a little bit wiser, and develop a sixth sense when things aren't just right.

At quarters on their 21st anniversary, the CO pulled the rug out from under the ASO's best-laid plans. He announced that a simulated "accident" would be "gamed" in which a fictitious crew in aircraft No. 5 had been lost at sea with no survivors. He wanted all hands to look deeply into themselves, their aircraft, and their procedures. The purpose was to prevent a real accident by eliminating those factors that could contribute to a mishap.

The drill included a review of selected officer and enlisted personnel records plus their training records for completeness and accuracy. Personal affairs were reviewed which included rudimentary estate-planning calculations. The aircraft logs and maintenance records were carefully reviewed, and discussions with each maintenance shop supervisor were conducted to see what might have caused the "accident" to No. 5 aircraft. An actual inspection of the bird was made. Squadron procedures were examined, especially the realistic execution of the squadron Pre-Mishap Plan. They continued to examine procedures throughout the exercise. Squadron SOP was reviewed, as all department heads dug deeply into the records and files, and each asked, "Could it have happened to me?"

The entire squadron was involved because it was too close to home for anyone to remain aloof or detached. The seriousness of the "game" took its toll, and by critique time, most knew that they had been through an intellectual and emotional wringer.

Problems arose – lots of 'em – but the CO was pleasantly surprised by how much better things were than he thought they would be. The critique was a



GROUND RULES

1. This is a simulated aircraft mishap; however, all departments will respond as they would in an actual situation. This will include all required notifications, message drafting, and strict compliance with applicable directives.
2. All messages will be typed in the smooth (single copy) and clearly marked "Exercise-do-not-transmit" at the beginning and end of the message text. No messages or phone calls will go outside the command.
3. All telephone calls to other commands will be made to 684-7103 or 684-7230, using the following format: "I have a message for _____ (name of command or telephone number)." Wait to be connected to a monitor; then give the text of the message.
4. The CO and XO will be touring the squadron spaces during the exercise and will not play an active or advisory role.
5. The senior officer available for the exercise will be the Operations Officer.
6. All problems or difficulties encountered should be fully documented and submitted during the critique.
7. The exercise will terminate at 1200, and a critique will be held in the wardroom at 1300. QUARTERS WILL BE AT 1430!
8. The Admin Officer and the Safety Officer shall record and summarize the "lessons learned" during the exercise and critique.
9. This is an all hands effort. All division and branch officers will supervise a complete investigation by their shops into the possible causes of and contributory factors to the simulated accident.
10. All aircraft records and simulated classified material lost will be taken from Event 3 on 21 November.
11. All service and training records will be actual records randomly selected and labeled in accordance with the fictitious crew list.

no-holds-barred session. All participants were caught up in the spirit of "tell it like it is" and the squadron was the better for it. The experience gained that day came the easy way, and it didn't take too much effort to correct the errors which were illuminated during the drill.

A safety record like VP-22's doesn't fall out of the blue, nor is it something special, available to only one particular squadron. Safety attitudes, practices, and performances must be learned and religiously followed. They require dedication, daily application, and individual patience. Safety is an important product in an aviation squadron's bag. It must be critically examined, continually refreshed, and all hands must be encouraged to let safety become a way of life.

Twenty-one years of accident-free flying became 22 just a few months ago. It reflects true professionalism, dedication, and inexhaustible attention to detail on the part of all *Blue Geese.*

SCENARIO

At 0830 this morning, the Patrol Squadron TWENTY-TWO Duty Officer was informed by a VP-17 aircraft on VP-22 base radio that QA-5 had crashed and sunk in Ocean East low with Crew 9 aboard. The PPC was unable to relay this report to COMPATWING TWO. There are apparently no survivors. SAR forces were alerted by the VP-17 crew. Crew 9 crewmembers are as follows:

PPC	LCDR Heavy Foote
COP	LT Axel Rodd
COP	LTJG Nopee Plumber
TAC	LTJG Plot Stab
NAV	ENS High Drift
F/E	ADJ1 Max Power
COMM	AT3 Gabriel Cratt
1st SS	AW1 Up Doppler
2nd SS	AWAN Noel Doppler
3rd SS	AW2 Palmer Raster
2nd MECH	ADJ3 Phillip Driver
IFT	AT1 Tweet Gehr

A simulated accident will be "gamed" wherein fictitious Crew 9 in QA-5 was lost at sea with no survivors. The scenario and ground rules are attached. The squadron will: 1) realistically exercise the squadron Pre-Mishap Plan (COMPATWINGTWOINST 3750.6); 2) conduct discussions within each shop concerning what could have contributed to or caused the accident, with emphasis on that shop's responsibilities; 3) thoroughly review the logbooks of QA-5 with particular emphasis on past discrepancies and work performed on it; 4) actually inspect the aircraft for possible safety hazards.

Conduct two survivor's benefits/personal affairs lectures for selected personnel as scheduled in enclosure (2). Each individual is to actually compute his own estate; the results are to be known only to the individual and (hopefully) his "survivors."

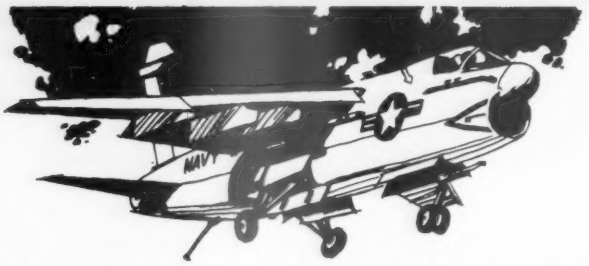
Review selected officer and enlisted personnel records for completeness and accuracy.

Exercise PAO and CACO responsibilities.

As applicable, maintain notes, comments, or logs in order to critique the day's events and submit to Department Heads. These are to be used to prepare a "lessons learned" file.

All *Blue Geese* are cautioned that today's schedule of events deals with a hypothetical situation of great seriousness and sensitivity. Extreme care on the part of all must be exercised to ensure that this simulated tragedy remains entirely within Patrol Squadron TWENTY-TWO spaces. Inadvertent or erroneous disclosure of portions of this exercise could create apprehension and alarm among those not directly involved. Our mission today is to learn, not alarm. This is *Blue Goose* day for professional and personal introspection and assessment. Let's keep that old goose flying high!

AIR BREAKS



Runaway P-3. A couple of months ago, a P-3B was being moved by a "budda" and the required number of ground personnel. The chief who was supervising the operation signaled the brake rider to set the brakes. It was done. The "budda" was unhooked, and the brake rider exited the aircraft.

While the tow bar was being disengaged, the *Orion* began to roll down the inclined ramp, right toward other parked aircraft. The chief who was holding the tow bar sized up the situation quickly and, using the tow bar as a tiller, turned the *Orion* away from the parked aircraft. The plane rolled about 30 feet.

Meanwhile, one of the wingwalkers (PO1) grabbed the boarding ladder and raised it off the deck to prevent it from breaking loose from its attaching point on the aircraft. If it had broken loose, it would have been impossible for the brake rider to get back aboard and jump on the binders. The brake rider (PO3) scrambled up the ladder while the aircraft was slowly moving and stopped the wayward *Orion* with the brakes.

Naturally, everyone wondered why the brakes had not held the first time they were applied. They found out that someone had twisted the brake handle about two-and-one-half turns. This was enough to shorten the cable which controlled the locking mechanism. Therefore, the handle *appeared* fully extended when it wasn't far enough to lock the parking brakes.

There's no accounting for the unknown person who twisted the brake handle, but we praise the know-how and safety awareness of the ground handling crew. Their quick reaction and teamwork saved at least one P-3 from damage.

Penny for Your Thoughts. Following a day catapult launch, a KA-6D was on climbout. Passing 15,000 feet, the crew noted that the cabin altitude was equal to the aircraft altitude. Cabin airflow was normal and environmental controls were verified to be normal with the cabin dump off. During the entire climb, both the cabin altitude and aircraft altitude remained parallel. After leveloff at FL240, the environmental switches and cabin dump were cycled with negative results. After the mission was completed, the crew descended to 12,000 feet when the switches were again cycled to no avail.

When a troubleshooter examined the cockpit pressure relief valve during postflight check, he found a penny lodged in the valve. The KA-6 had flown earlier in the day with no pressurization difficulties observed.

In today's marketplace, pennies don't buy much, but when left in the wrong place, they can cause great difficulty.

Checklist Omission. Operating in a cold weather environment often necessitates a slight modification in procedures. Specifically, consider the takeoff checklist for the P-3. Both the before-start and takeoff checklists call for setting flaps to TAKEOFF. Many crews complete the takeoff checklist as they taxi out to the end of the runway since it is possible for slush to be blown up into the cavity covered by the flaps. If the flaps are left up purposely, will pilots remember to come back to this item later?

Here's an actual case. The events proceeded as outlined above, and the PPC wheeled onto the runway and lined up with the centerline. The aft observer called FLAPS over the ICS. Another pilot sitting behind the flight engineer noticed the omission at the same time and told the pilot. Corrective action was taken and the takeoff proceeded uneventfully.

The crew discussed the problem at length in a serious vein. Some stated that they felt the problem would have

APPROACH is a monthly publication published by Commander, Naval Safety Center, Norfolk, VA 23511. Subscription price: $11.70 per year; $2.95 additional for foreign mailing. Subscription requests should be directed to: Division of Public Documents, Government Printing Office, Washington, DC 20402. Controlled circulation postage paid at Norfolk, VA.

been noticed when rotation was attempted. There would have been plenty of runway remaining to abort or to lower flaps and just extend the takeoff roll a bit. Others felt the omission was no big deal and the pilots could have made a no-flap takeoff.

Since accidents are the result of a number of contributing factors, why build one in when all it takes is to change the order of an item on a checklist? The idea of the crew discussing this is great. It shows that everyone in the crew needs to be alert. Future almost-mishaps can be prevented by changing the item (flaps) to the end of the checklist; holding the checklist until you reach the hold-short line; or stop the checklist at a point where something is not going to be completed and resume when it's accomplished. One thing for sure: skipping over items can only lead to trubs.

Too Close. The difference between an incident and a major accident is often just inches, a split second, or just plain luck.

There's a young fighter pilot who had all three conditions going for him, and who knows, having learned the hard way, he may live to become the ace of the base.

The pilot of an F-4N returned, at about last light, to land aboard a carrier. He was shooting a Case III CCA. The LSO gave two rapid power calls followed by a waveoff when the pilot made an excessive power reduction in-close. The waveoff was given too late to permit safe execution, but the LSO believed it necessary due to the pilot's reduction of power. The pilot incorrectly responded to the waveoff by rotating to a nose-high attitude.

The LSO commented as follows: Cut pass, high start, climb in-close, eased gun in-close, in flight, No. 2 wire.

The PLAT tape and observations by witnesses indicate that the aircraft had either just touched down, or was only inches from touchdown, when it caught No. 2 wire. A full hard-landing inspection was made and the damage was confined to a pendant slap on the stabilator. About 125 man-hours were estimated for repairs.

The squadron CO took the pilot to task for a poorly executed night CCA and landing; especially with his excessive power reduction in-close, and grossly improper waveoff technique. A contributing cause was the LSO's late waveoff signal.

The CO and the senior wing LSO, both of whom watched the approach and landing, disagreed with the controlling LSO that the waveoff was needed to get the aircraft over the ramp, although all agreed the power calls definitely were needed. Had the pilot responded to the late waveoff with proper technique, instead of overrotating, the aircraft would have made a safe arrested landing. Only the fact that arrestment and touchdown occurred so closely together prevented major damage. It never was determined whether or not there was an actual inflight engagement.

The pilot and the LSO were counseled, and the former received a special debrief. His position on the flight schedule and landing performance would receive extra attention for the rest of the cruise, and he would receive extra fieldwork during the next inport period.

You can bet that probably none of the pilots in this squadron will duplicate the reported performance. However, you can also bet that some pilot in another tailhook squadron will do the same thing within 60 days after this article appears. Two questions remain: "Will the next pilot have all three conditions going for him?" or "Will the next one be a major mishap?"

Fuel Leak. AO3 John Horton of VP-16 recently proved the value of thorough, conscientious performance, even in normally routine tasks.

One winter night the P-3 took off from NAS Jax to fly across the Atlantic with 60,000 pounds of fuel onboard for the flight. After takeoff a Condition 4 check was conducted and Horton knew something was wrong. He discovered a massive fuel leak coming from the No. 3 engine and promptly reported it. Fuel transfer from tank No. 5 was terminated, but the leak continued. The No. 3 engine was secured in accordance with NATOPS emergency shutdown checklist, and the leak stopped. Fuel was dumped and a landing was made. Later, it was discovered that a bad seal in the No. 3 filler cap was the cause. Feathering the No. 3 prop and shutting down the engine broke the siphon and stopped the leak.

Thanks to Horton's conscientious performance of duties, a more serious emergency was averted. Congratulations, AO3 John Horton, for an outstanding job. ◄

HUREVAC* No.1 and Subsequent

By CDR Harry Fremd
Naval Safety Center

SUMMER is here, along with its attendant seasonally associated problems; i.e., thunderstorms, hail, wet runways, skeeters, sunburn, and last but not least, hurricanes. There have been reams and reams of paper written on all the above; however, there is a spinoff of the last item mentioned which defies analysis (safety or otherwise) – the hurevac!

The hurevac is instigated by the real or imagined threat of a hurricane. The word hurevac turns normally rational people into red-eyed monsters, wild men, and drunks (not necessarily in that order).

Perhaps the best way to analyze the safety implications of this manmade phenomenon is to relate a few of my own personal observations during past hurevac evolutions (I have survived several), covering a span of three tours in the training command.

The first hurevac in which I participated (?) was in the days of the SNJ. We were in CQ phase when the duty blow came roaring up the gulf. As usual, we had flown our last syllabus flight about 1600 when the word was received to go to old NAS New Orleans on the shores of beautiful Lake Pontchartrain. The program was to launch one instructor with three students, making up a four-plane flight.

We took off in a "pinky," but by the time we arrived at NOLA it was black dark. As usual, it was near the end of the month and between the four of us we had one complete radfac (FLIP charts to you youngsters). The page you wanted, if not the whole book, always had a way of disappearing when you needed it, but by some homing instinct known only to junior birdmen, we arrived, remembering those terse words of our instructor about strange fields: "Land slow, there's water at one end of the runway and a graveyard at the '45' from either direction." After 1 day and 2 nights of waiting it out, we returned to Barin Field at a bit more relaxed pace. In fact, we were so beat, boomed out, and broke, we couldn't have tensed up if we had wanted to. That was my first hurevac.

*Hurricane evacuation

Four years later, a bit older and wiser, I found myself a flight instructor at Saufley. By now, I was sure we had learned a lot about this safety bit. We had tricycle gear trainers (T-28 and T-34) and the advanced training command had mostly jet aircraft. We even had supersonic fighter aircraft. Against this advanced space age background, we were still working 6 days a week grinding out studs when along came a hurricane boiling up the gulf.

At about 0900 a double recall went out causing the "weinees" to descend on Saufley like locusts. I counted 10 aircraft rolling out on the runway at one time. It was lucky enough that no one was killed in that evolution, but when we ferried them to NAAS Corry Field for hangaring, it was instant replay all the way. There was a massive group grope formation by pilots who weren't too current in formation flying, to say the least. That old saying applied: the Lord takes care of fools and drunkards, and the devil takes care of his own. This is how, I guess, we all survived again.

The next year was the same story except then it was decided we would go to Meridian, shades of SNJ days. Times might have changed but the story was the same: studs flying into strange fields at night, no FLIP pubs aboard, and no sleep.

Seven years later: one morning we were busily pumping studs when the fateful word came over squadron common, "Dump and return to base."

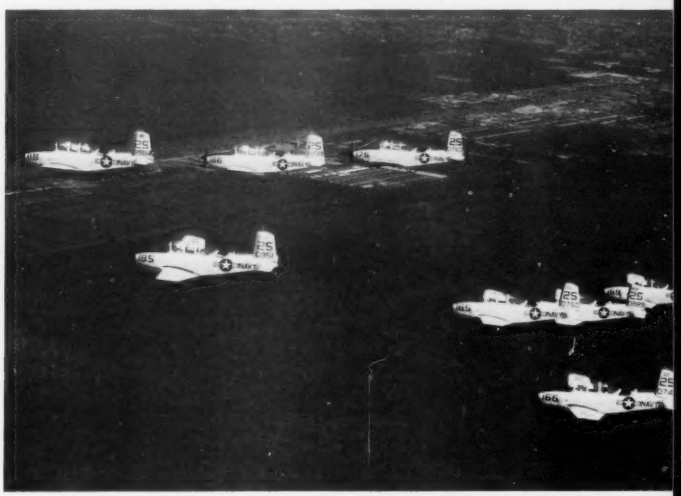
Simultaneously, scores of anxious studs scurried for home before the unknown threat could get them. Meanwhile, back at the ranch, the pattern resembled a beehive on a busy day. Suddenly it became apparent that the air was filled with low state students who had done as told, dump and return. By the luck of the Irish, we gathered all birds safely.

Then the real turmoil started – frantic running home for clothes, telling the bride she would sit this one out by herself, etc. Lo and behold! There we were, 15 years after my first hurevac, launching off into a "pinky" with four jets (one with no radio), one set of charts, and one bird with no navigation lights, for a strange field (NAS Dallas) with nonformation-qualified troops. I had to lead the formation because I hadn't been night checked out in the aircraft, much less form-qualified. It was my first week in the jet squadron and quite gratifying to see how far we had progressed in making hurevacs safer since I had gotten my wings 15 years earlier. You know, they still were stacking us four to a room, too.

Perhaps the main point of this dissertation is that hurevacs *do not have to be this way.* Things really have gotten a lot safer – the radar coverage is better, navigation aids are better, the gear in the aircraft is better, so that leaves just one area in which we can improve – preparation of people. In the course of my career, I've seen some pretty fancy (but unworkable) hurevac plans. Remember, no plan is any good unless it can be effectively implemented, when needed, by the people who are available at that particular time.

As I look back over the flaps I've been through, I find the common problems fall into seven categories as follows:

- Preparing orders for the departures – Tango numbers, etc.
- Preparing the snivel list – who can't go and why.
- Preparing the extra cross-country packets.



- Keeping track of aircraft – who's in what bird and if it's gone.
- Preparing logistics plans to get parts to fix downed birds at divert fields.
- Keeping track of pilots so a recall can be executed with reasonable expectation of everyone getting the word.
- Planning to cover the perennial "straggler" in the group with no radio.

Any plan that doesn't cover the above points has serious shortfalls in it and increases the chances of problems in one or more areas. Records at the Naval Safety Center are filled with reports of lost planes, forced landings due to fuel starvation, near-misses, and flathatting under the guise of expediency – not to mention some interesting tales of the trials and tribulations of night stacking over NAS Podunk. These stories make good hangar tales, but they certainly do not enhance the spirit of professionalism we need in Naval Aviation. A simple, completely workable hurevac plan will not, by itself, give us professionalism, but it will be another step in the proper direction. ◄

ALTERNATE to what?

REMEMBER the last time you filed your DD-175 and the duty "weather-guesser" told you, "With this destination weather, you'll need an alternate." Was that the first time you gave any significant thought to an alternate? Let's face it. A candid "yes" would have to be the answer for far too many of us.

Alternates are something you put in your DD-175. Fuel and time to your alternate are what the instrument schools want you to fill out on the back of your jet log. Alternates and their weather requirements are those things addressed on the annual instrument exam. And that's about the extent of concern many of us give the subject. With the growing positive control environment and a gent behind a coffee cup and radarscope giving you comfortable vectors, jet instrument flight has trended toward "needle on the nose" navigation and a bit of frequency switching. The insidious seeds of complacency are well planted – seeds that can produce accidents such as the one that recently occurred.

An experienced jet-type filed and launched from NAS Mid-Lant in his trusty TA-4 to an ANGB within a Type I TCA. Weather was above TACAN minimums on departure (no GCA at this ANGB) and predicted to hold. His USAFB alternate was VFR and stayed that way throughout the incident. At his destination ANGB the pilot failed to break out at minimums.

Instead of diverting to his filed VFR alternate, the aviator (after missed approach) began searching for another destination in the local area. Fortunately, his fuel state gave him time. A second try at a nearby civilian field resulted in a second missed approach. The third try found a slightly better weather situation at NAS Northeast, but enroute he found that the wind and wet runway necessitated an intentional arrested landing. The gear was never taken, however, as the aircraft landed short of the runway after breaking out on a GCA.

Many of us have had an occasional divert. Rarely have we needed a second on the same hop. This incident prompted a few questions when the story began to unfold.

The flight to the initial destination was routine enough. Below minimum weather on arrival (although not predicted) isn't all that unusual. I'd like to think most of us have adopted the practice of an enroute Metro check. When our jet-type opted to file in flight to other than his filed alternate, things began to become shaky. In the ensuing radio chatter with Center it became evident the pilot didn't know his second destination was "official business only" and was closed that day (a check of NOTAMS before departure would have verified this). His third destination's lack of an "up" TACAN, although listed in NOTAMS, wasn't known until he arrived at the field. He hadn't had time to really look at the approach plate and runway layout, but the GCA appeared OK . . . until he hit a few feet short of the overrun after breakout on short final.

The logical questions seem to be: (1) Why not divert to the filed alternate right off; (2) Why continue to try to land at destination No. 2 – only a few miles from the initial destination – when there was no indication of any better weather there; and (3) Ditto for the third destination.

The pilot did check weather, facilities, and NOTAMS for his destination and his filed alternate. He didn't for the

second and third destinations. Apparently they really weren't selected as "alternates" – later upgraded to destinations – until some time after leaving the chocks. At no time did the pilot advise Center of his missed approach intentions.

Thus we come to the question: Just what *is* your alternate? And why, if you prepare a flight plan to an alternate which includes review of all applicable planning factors, do you choose *not* to go there when you can't make it to your destination?

The answer given this older-type was that the VFR USAFB indicated as intended alternate on the DD-175 was this jet-type's alternate "for filing purposes [only]." He did not intend to divert there even if unable to land at his intended destination . . . except *in extremis*.

Let's digress for a minute and discuss alternate filing. What follows proved to be unexpectedly new to many pilots of this command.

OPNAVINST 3710.7H is specific in requiring Navy and Marine Corps pilots to file a DD-175 alternate under certain weather conditions. Fuel, weather, and facilities criteria are clearly defined. FAR, Parts 91.83 and 91.23 impose similar requirements. When your DD-175 is processed at the departure facility, however, the filed alternate *IS NOT* entered into the computer at Center because FAA does not require it. It remains known only to you and to the ODO should he decide to look it up on the copy you left him.

What does this mean to you? It means that unless you advise Center or some other facility what you intend to do upon missed approach (yes, you do miss a few now and then), you have no place to go and no protected airspace. Let's aggravate the situation only slightly and discover you're NORDO about midway down the slot.

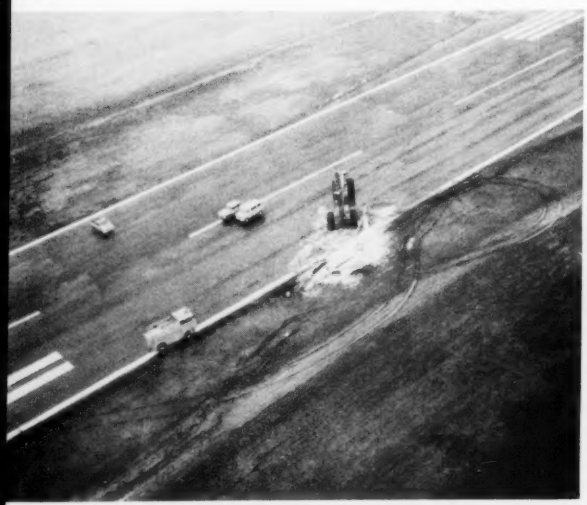
By CAPT J. E. Russ
Commander, Training Air Wing TWO

Applying this series of "what ifs" to our jet-type's situation, and remembering he was in a Type I TCA, what might have followed?

Presuming a NORDO situation after pushover but before reaching minimums at ANGB, he properly would have proceeded to his filed alternate, good old VFR AFB, following all the existing rules. But Center would not have known where he was headed! Undoubtedly they would have contacted the ODO of his departure facility and hopefully found out. Had the pilot stated his intention prior to pushover – no real problem on a divert.

We could probably generate some pretty heated readyroom chatter if we take his tries at the second and third destination and apply a NORDO situation selectively at various stages. Consider also the multiple diversions of other traffic Center would have faced had a NORDO materialized in this case . . . and the mountain of paperwork faced later by jet-type and his CO from the resultant delays, diversions, and interruption of the civilian traffic in the TCA.

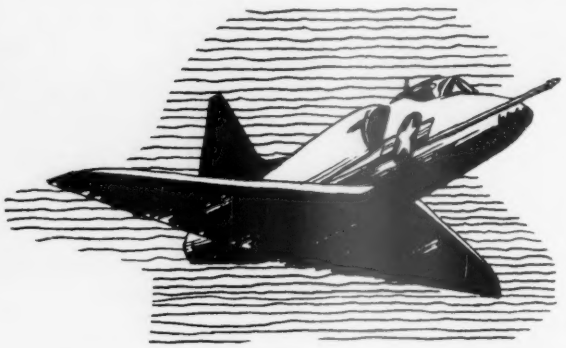
OPNAV says you must have an alternate under certain destination weather conditions; so you select one and file it. Just what does that mean? Most of us that have been around awhile also read those regs to mean (barring a most unusual circumstance) the filed alternate is *where you will fly to* if you miss your approach at initial destination – otherwise why list any? I read it to mean you have planned for the contingency of not making it to touchdown at your



planned destination; you have selected a suitable alternate; and have planned an appropriate and safe destination-to-alternate leg; and if you must select another, you will let Center know in advance. Although the regs don't have these words appearing on the paper, I and other older-types I've talked with on the subject read the regs as if those words were there.

So, let's get back to that "for filing purposes [only]" statement. It reveals another interpretation to what seems so simple and straightforward a requirement. The essence of the "other" interpretation is that the alternate is a field to which you could safely fly and land NORDO if you can't get in to your destination, but *not necessarily the field to which you will fly!* This interpretation seems to me to imply compliance with the letter but not the spirit of the regulation – an attitude certainly not conducive to reliably safe operations. Under this interpretation, what is the value of filing *any* alternate?

Looking at our jet-type's experience, had his constructive NORDO occurred at either the second or third destination, serious doubt of the pilot's intentions would have existed. To cover all options, Center would have had to clear a path through a significant part of that Type I TCA ahead of the *Skyhawk's* "blip," hoping the pilot would find a place to plant it. This is definitely not a desirable situation to set up.



The OPNAV regulations make understandable provision for a change of destination enroute if there is a need. It seems clear to me the regs also call for filing an alternate for the sound reason that careful preplanning greatly enhances your probability of getting there. The intent seems clear that your "filed" alternate is where you intend to go if unable to land at your filed destination. There are no third or fourth facilities in the equation – just your destination and your alternate – both carefully planned. It also follows, in light of the revelation that Center does not routinely know your alternate intentions, that the pilot *must* advise Center before departing the IAF of his missed approach intentions if there is even the slightest doubt of landing at his destination. The instrument refresher squadrons talk about this, but how many students really listen? How many of us truly carry it into routine practice? This is one older-type who is going to give significantly greater attention to alternate selection and planning from now on.

P.S.: A related "booby trap" became evident recently which bears on the previous story. We frequently will not indicate our intended alternate on the DD-175 when first making it out, preferring to wait for the weather brief to make a final decision. Now that all Navy pilots can sign their own DD-175s, there's a real possibility of neglecting to fill in the identity of your intended alternate before turning your DD-175 over to the ODO. Pull this stunt and even your friendly ODO can't tell Center where you're going on your NORDO divert.

Radar Altimeter Use

FOLLOWING the last night bombing run, the pilot of an A-7E was attempting a rendezvous with the lead aircraft. The leader observed the aircraft joining and then returned his scan to his own cockpit. Moments later, the rendezvousing A-7 flew into the ground in a flat attitude.

During the investigation, the radar altimeter was recovered and it was found that the low altitude warning feature had been set at 60 feet. The briefed minimum altitude for the bombing mission was 1500 feet.

Better use of this simple, often neglected, often misused but important instrument probably would have saved this pilot's life. If you are radar altimeter-equipped, do you use the instrument effectively throughout the mission?

TOTAL AWARENESS

By LT W. R. Mayfield
NARU North Island

DURING a recent WESTPAC deployment, I was the plane commander for a day launch in an E-1B. Preflight, man-up, and all prelaunch checks were normal. Immediately after launch I noticed a slightly unusual noise coming from the port engine. I assumed that the props were out of sync, but cockpit indications did not support that assumption. A thorough visual inspection of the engine nacelle and all cockpit instruments failed to show any abnormality or reason for a strange "popping" sound.

I elected to continue the flight and closely monitored the port engine for any complications. Upon completion of the flight, a close inspection of the port engine revealed a 1½- by ½-inch crack in the top of the No. 1 cylinder! The escaping exhaust gases had scorched the inside of the cowling *and* the prop feathering oil supply line. Had this oil line burned through, a fire would have certainly been the result. In addition, there would have been no way to feather the port engine.

Luck was the only thing that kept that flight from becoming another grim statistic. This incident really emphasized to me that a pilot must use *all* his faculties to determine the condition of his aircraft. Just because the cockpit instruments indicate that everything is OK, visual and aural indications are a valid and important part of the overall picture. I learned an important lesson on that flight. Hopefully, other pilots will take heed and not accept an "unexplainable" abnormality in his aircraft. It could turn into an "unexplainable" accident.

What you don't know *can* hurt you. It might even get you a...

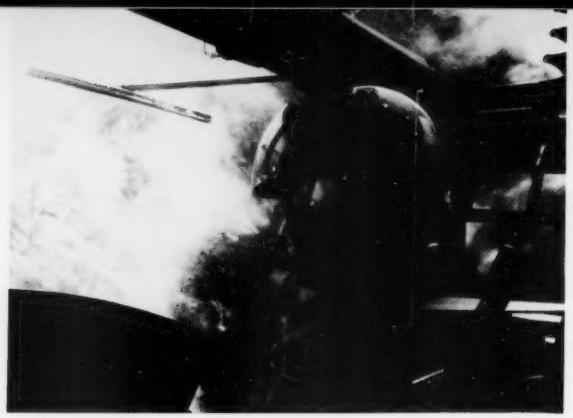
Flight Violation!

By LT Dave McPherson
VF-43

"NAVY Alpha Mike 105, you are cleared to Big State Naval Air Station via Amador-3 Departure, Linden Transition, flight plan route. Climb and maintain one zero thousand feet, expect flight level 230 at Linden VORTAC. Bay Departure on 354.1, squawk 2136, contact the tower when ready for takeoff."

If you were the pilot in command of the aircraft receiving this clearance, referencing Fig. 1, what would be your initial level off altitude (filed for 330)? Ten thousand feet, you say? That's what a pilot recently flying this clearance thought, and the result was almost a flight violation.

The reason a report was filed on this pilot was because he failed to stop his climb at 5000 feet as the SID required at the Sunol intersection. The pilot construed his "climb and maintain 10,000 feet" clearance to mean that he was cleared of lower altitude restrictions. *This is not the case.* The 10,000-foot altitude assignment prevented the pilot



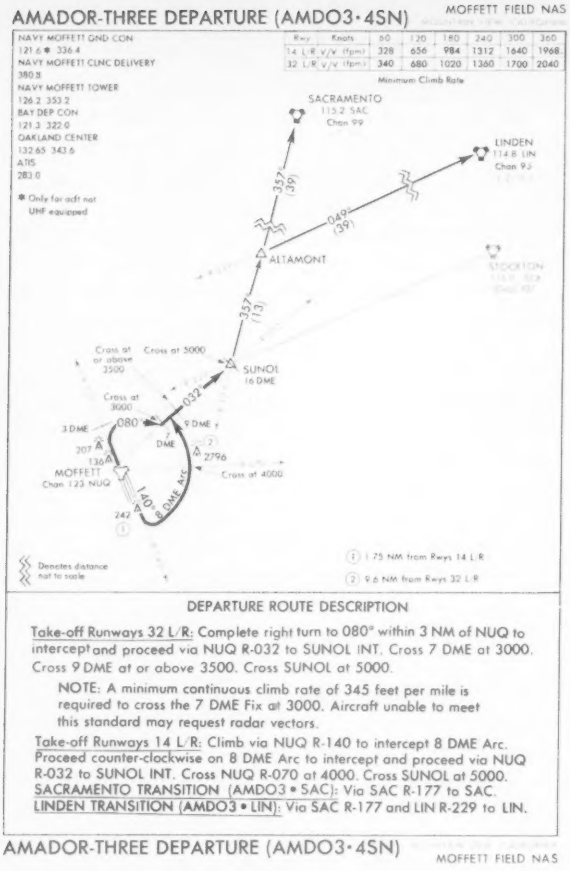

AMADOR-THREE DEPARTURE (AMDO3·4SN)
MOFFETT FIELD NAS
NAVY MOFFETT GND CON
121.6* 336.4
NAVY MOFFETT CLNC DELIVERY
380.8
NAVY MOFFETT TOWER
126.2 353.2
BAY DEP CON
121.3 322.0
OAKLAND CENTER
132.65 343.6
ATIS
283.0
* Only for acft not UHF equipped
Rwy Knots 60 120 180 240 300 360
14 L/R v/v (fpm) 328 656 984 1312 1640 1968
32 L/R v/v (fpm) 340 680 1020 1360 1700 2040
Minimum Climb Rate
SACRAMENTO
115.2 SAC
Chan 99
LINDEN
114.8 LIN
Chan 9-
ALTAMONT
STOCKTON
357 (39)
049° (39)
357 (13)
Cross at or above 3500
Cross at 5000
SUNOL
16 DME
Cross at 3000
032°
080°
9 DME
3 DME
DME
207°
136°
2796
Cross at 4000
MOFFETT
Chan 123 NUQ
140°
8 DME ARC
242°
Denotes distance not to scale
1 1.75 NM from Rwys 14 L/R
2 9.6 NM from Rwys 32 L/R
DEPARTURE ROUTE DESCRIPTION
Take-off Runways 32 L/R: Complete right turn to 080° within 3 NM of NUQ to intercept and proceed via NUQ R-032 to SUNOL INT. Cross 7 DME at 3000. Cross 9 DME at or above 3500. Cross SUNOL at 5000.
NOTE: A minimum continuous climb rate of 345 feet per mile is required to cross the 7 DME Fix at 3000. Aircraft unable to meet this standard may request radar vectors.
Take-off Runways 14 L/R: Climb via NUQ R-140 to intercept 8 DME Arc. Proceed counter-clockwise on 8 DME Arc to intercept and proceed via NUQ R-032 to SUNOL INT. Cross NUQ R-070 at 4000. Cross SUNOL at 5000.
SACRAMENTO TRANSITION (AMDO3 • SAC): Via SAC R-177 to SAC.
LINDEN TRANSITION (AMDO3 • LIN): Via SAC R-177 and LIN R-229 to LIN.
AMADOR-THREE DEPARTURE (AMDO3·4SN)
MOFFETT FIELD NAS

Fig. 1

from climbing to his filed enroute altitude, but it in no way cleared him to climb through the lower altitude restrictions depicted on the SID. Unless the controller had used specific terminology such as "delete altitude restrictions" or "cleared unrestricted climb," the pilot was obligated to adhere to any published restrictions on the SID, in addition to other limits that were added to the clearance.

Another related area of confusion concerns altitude restrictions when the departure controller shortcuts the SID and assigns vectors to intercept an outbound radial or a fix further along in the SID. For example, if in the above situation the controller cleared you immediately after takeoff to "Turn right 050, direct Sunol, flight plan route," would you be required to cross Sunol at 5000 as depicted on the SID?

The answer is no. A SID is basically a non-radar procedure, and once you are taken off that procedure and into a radar vector situation, the SID is no longer applicable. In conjunction with the vector, the controller is *supposed* to give you an altitude assignment in addition to an end point to the vector ("cleared direct Sunol, flight plan route, maintain 10,000"). If he doesn't give you that altitude, you are cleared to the altitude limit as assigned in your clearance. As always, though, if any question exists in your mind about a clearance, *ask* the controller to clarify the situation.

This same principle applies to some instrument approaches as well. If you are cleared for a TACAN penetration with a GCA pickup, you will usually receive a bottom altitude to descend to, but you are obligated to adhere to the published TACAN altitudes, if higher, until taken off the approach by radar vectors.

More than one pilot has been confused by this combination of non-radar and radar procedures used together. Fortunately, the pilot in this episode was not given a violation. As part of the investigation conducted because of this pilot's error, his squadron submitted a recommendation to modify the NATOPS Instrument Flight Manual as follows:

"If a SID is part of an ATC clearance, refer to it as necessary during the departure. Do not deviate from its published route or altitude, regardless of weather conditions, unless specifically cleared to do so by ATC or in the event of an emergency. If a clearance is received to a higher altitude than that depicted in the SID, the more restrictive (lower) altitude still applies unless ATC states 'cleared unrestricted climb' or 'delete altitude restriction.' "

FARs, OPNAVINSTs, instrument manuals, and of course the annual instrument ground school have long been recognized as God's gifts to insomniacs. Nevertheless, the increasing density of air traffic resulting in increased positive control and increasingly complex instrument procedures make it incumbent on every naval aviator to *really know* instrument procedures and regulations. Your reputation as a pilot, your career as a naval aviator, and maybe even your life depend on it. ◄

They said it couldn't be done!

A SINGLE-ENGINE failure and a utility hydraulic loss is a deadly combination in the F-4. In fact, five previous Navy and Air Force *Phantoms* have crashed as a result of this multiple failure. Therefore, when this multiple emergency happened to LCDR Frye of VF-301, only expert airmanship, thorough knowledge of NATOPS, and invaluable assistance from his wingman enabled the damaged aircraft to return.

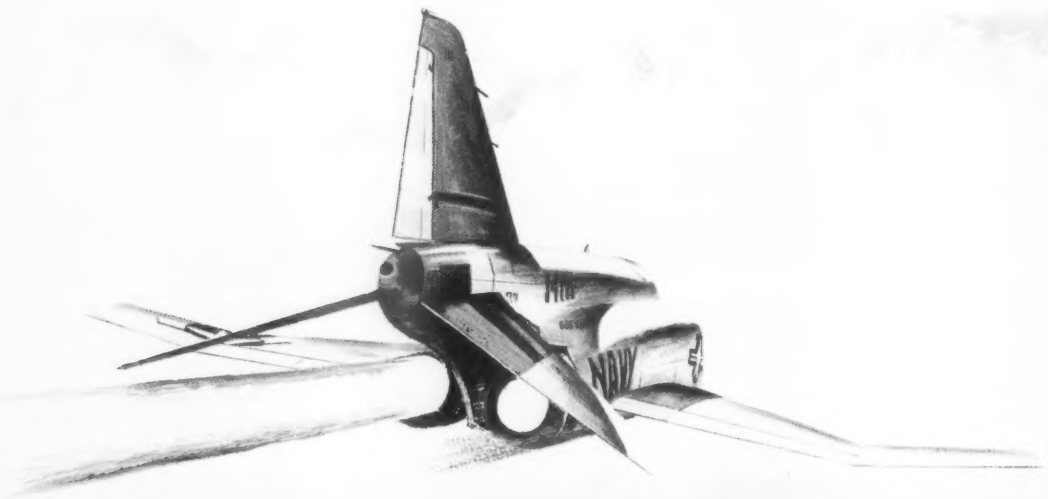
The flight started as a two-plane air intercept training mission with LCDR Frye and LT Boucher in the first aircraft and LT Archer and LT Eldridge in the wing aircraft. Brief, start, takeoff, and climbout to 21,000 feet were all normal, with the aircraft proceeding to an offshore operating area for GCI control. LCDR Frye's aircraft, ND 105, was designated as the fighter aircraft for the first engagement, and the two aircraft proceeded to opposite ends of the warning area to achieve separation. As LCDR Frye turned back toward the bogie, he started a climbing turn and went smoothly to 100 percent. After a few thousand feet of climb, with both engines accelerating, a loud explosion occurred, followed by an immediate and abrupt yaw of the aircraft to the left. The aircraft began to vibrate violently and the left engine firewarning light illuminated.

Following NATOPS, the pilot retarded the throttle to IDLE. But when the firewarning light remained illuminated and the left engine overheat light came on, the left engine was shut down.

The aircraft was still *in extremis,* however. The right engine firewarning light lit up, and the aircraft continued to vibrate violently. The wingman had joined up in the meantime and observed white and brown smoke streaming out of the left engine exhaust nozzle area. The right engine was closely inspected for evidence of fire or smoke, and since no secondary indications existed, LCDR Frye advanced the power on the right engine although the firewarning light was still on.

As the damaged *Phantom* limped toward NAS North Island at 13,000 feet, LCDR Frye extended the ram air turbine and assessed his situation. The left engine was shut down, the PC-1 system indicated zero psi, and the utility hydraulic pressure read 2000 psi and was decreasing. Both aux air door lights were on, the speed brake out warning light was lit, but pneumatic pressure was holding at 2000 psi.

As the aircraft descended toward North Island, fuel dump was initiated to reduce aircraft weight to single-engine limits. A straight-in approach was planned. The pilot attempted to lower the gear using the normal system, but due to limited utility pressure, only the right main gear extended, and all three gear indicators barberpoled. The gear was then extended pneumatically, and the pilot read three DOWN and LOCKED. The flaps were left up since the minimum control speed in this



situation was 210 KIAS.

LCDR Frye elected to orbit the initial to complete fuel dump and to perform a controllability check. At 7000 feet, the minimum control speed was 210 knots CAS with 5000 pounds of fuel remaining. As if things weren't bad enough already, the low fuel light came on at this point, so the pilot secured fuel dump and selected emergency transfer.

The crew decided at that time to commence a straight-in approach to Runway 36 at North Island. The *Phantom* touched down with a flared landing, indicating 220 knots CAS. The drag chute was extended at 200 KCAS, and the long field arresting gear engaged at 130 KCAS. After stopping, the right engine was secured and the aircraft towed to the NARF line on schedule for Beeline induction.

The primary cause of this mishap and all resultant damage was the catastrophic material failure of the 15th-stage compressor disk of the left engine. The cause of the compressor disk failure is unknown pending results of the DIR.

The crew was cited for exemplary airmanship in landing the aircraft after it had sustained multiple damage with associated systems malfunctions which seriously impaired flight and landing characteristics. It is significant to note, however, that good judgment and careful analysis of the situation were exercised at all times during the mishap. At no point did the crew display the attitude that "they were going to save the aircraft regardless of the odds." Rather, they analyzed each emergency, took appropriate action, determined control limits, and decided that a landing was feasible.

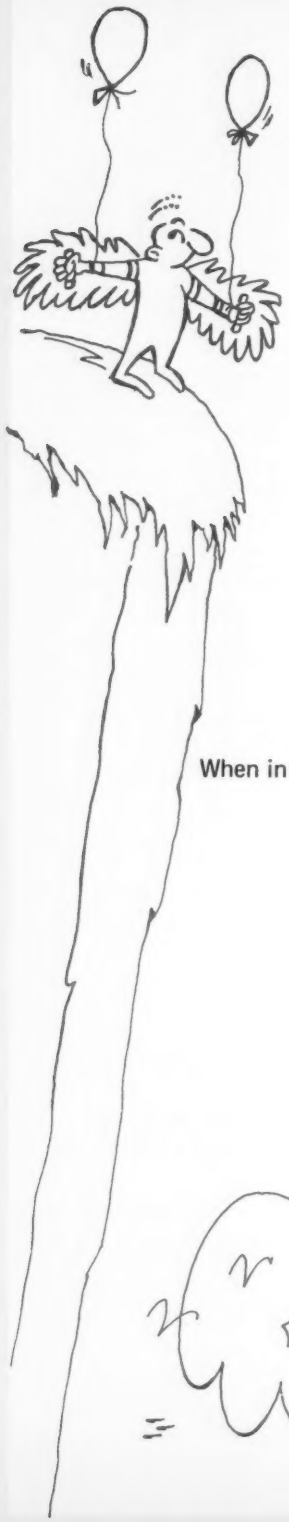
In addition to the excellent airmanship of the crew involved, considerable airborne assistance was provided by the wingman, LT Archer. He was able to assess the damage visually and make recommendations concerning a recovery attempt. Moreover, LT Archer was the NATOPS officer and provided valuable assistance in analyzing failures and recommending corrective action. Had this wingman not been available, cockpit and flight conditions certainly warranted ejection, and this would probably have been the prudent course of action.

Recommended action stemming from this accident was limited due to the pending results from the engine DIR. The mishap board did, however, recommend a change to the NATOPS manual to reduce the confusion the F-4 crew encountered in finding the correct procedure for their particular emergency. They just about executed the first checklist that looked appropriate – "single engine" – when in fact they wanted the "utility system and engine failure checklist." Had they executed the single-engine checklist, they would have lowered the flaps, which would have made the aircraft uncontrollable for landing in their configuration. Therefore, the board recommended that the checklist they needed be renamed "single engine and utility system failure" to avoid similar confusion in the future.

In his endorsement, the commanding officer reiterated the board's praise for the pilot's performance. He cited the recent 2F-88 training that LCDR Frye had received as an important factor in his capable handling of the emergency. He also emphasized the importance of aircraft systems knowledge as opposed to a superficial memorization of emergency procedures. The CO's closing remarks pretty well sum up the incident:

"The high degree of professionalism and expertise exhibited by this flightcrew resulted in saving an aircraft which otherwise could have been easily lost. The NATOPS manual states in a WARNING under utility system and engine failure: ' . . . if the combination of weather, landing facilities and pilot experience is less than ideal, consideration should be given to a controlled ejection.' The fact that this aircraft was recovered testifies to the skill of the aircrew and the validity of an effective ongoing and dynamic NATOPS program." ◀

The Wonderful



Hindsight is always an easy way to evaluate a situation.

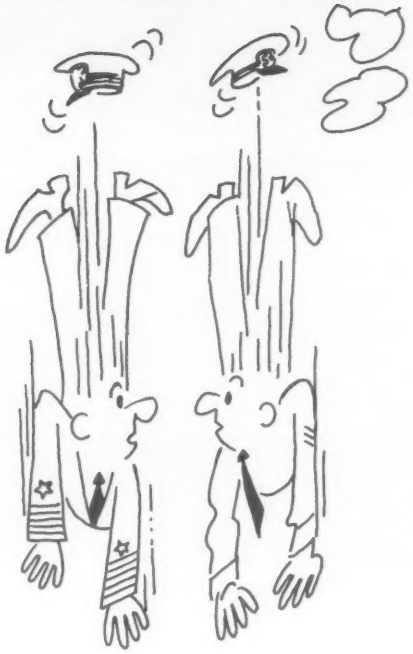
You can't put a price on good headwork.

When in doubt – don't!

Need a rest? Forget being vigilant.

World of Ace L.

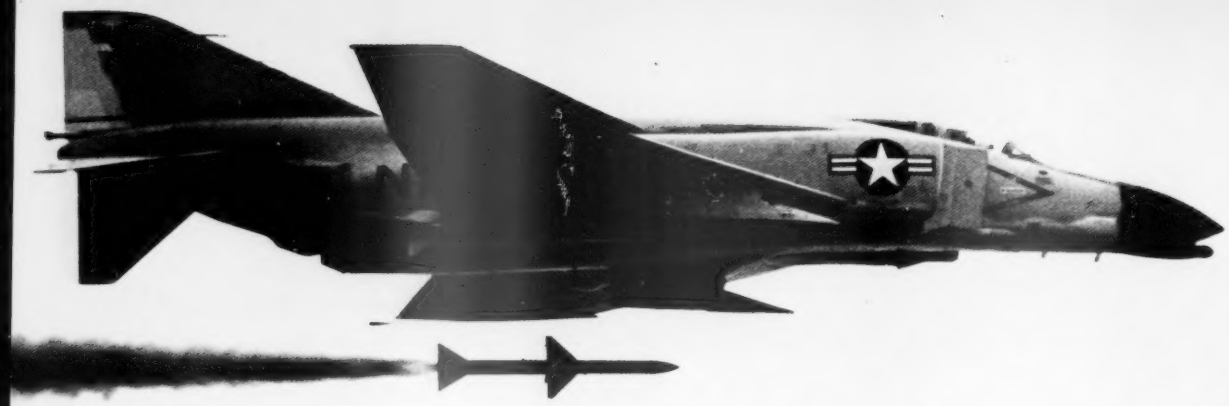
ople who boast of having an mind usually have a mouth to .

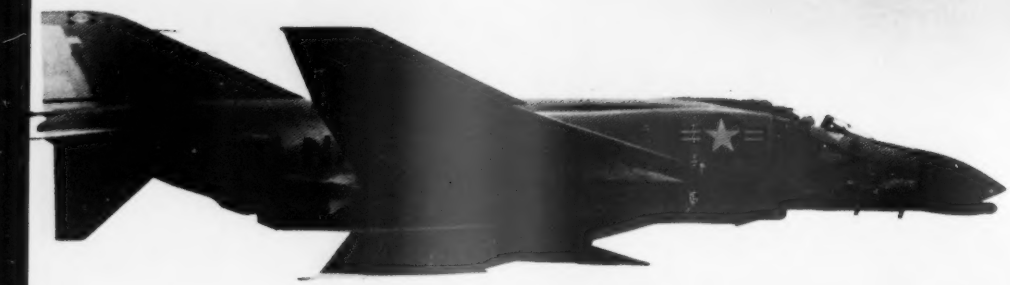


Gravity has respect for neither rank nor experience.

Lessons are better learned correcting poor approaches.

It's not whether you win or lose but how you place the blame.





MISSILEX:

SOMEWHERE over the Pacific, a Phantom aircrew is "doing their thing." The RIO is hunched forward over his scope, arm wrapped around the top to block out the morning sun, his words picked up by the miniature tape recorder spinning inside his survival vest: "Got him I5 right, now, 12 miles...still showing his altitude level...let's come to starboard for the dot...steady up, recheck missiles on...okay, in range, shoot, shoot, shoot."

FLAILEX OR SAFEX?

By LT Ross Burgess
VF-111

The pilot's gloved finger squeezes the trigger, and his left thumb comes forward on the mike button. "Fox One . . . op away!"

The RIO feels the *Phantom* lurch beneath him as the big missile comes off, but his eyes never leave the scope. "Okay, break starboard . . . steady up . . . bogey's drifting left, let's come port hard . . . 3 miles, 30 left, switch heat . . . on the nose at two . . . now you got the dot."

The pilot, after 2 or 3 seconds that seem like years, finally spots an orange speck out his windscreen. It's tiny, much smaller than he expected, but definitely the drone. As he calls "Tally Ho," he sees that he is inside the bogey's turn with too many angles. Stuffing the throttles up into burner, he pulls the nose up and rolls his *Phantom* to the outside, unloading over the top for displacement. He comes down the other side at dead six on the drone, and the tone is knocking his ears off as he pulls the trigger again. "Fox Two . . . op away!"

The big fighter pulls off and up as the pilot and RIO follow the white smoke snaking out ahead of them. The drone breaks starboard, but the missile hacks the turn and, to the aircrew's delight, knocks the wing off. After two or three spins, it is hanging in its chute, another victim of the Navy fighter team.

For the fighter aircrew, the air-to-air missile shoot is the ultimate in realistic training, testing long hours of preparation in a few intense minutes. Certainly not all missile shoots go as well as the scenario above, but successful or not, the most important consideration must always be safety. There are obvious extra hazards involved any time an aircraft fires weapons that are, quite simply, designed for the sole purpose of shooting down airplanes.

For the aircrew, safety begins with the brief. All aspects of the evolution must be covered thoroughly, from preflight to shutdown. Normal considerations such as departure, rendezvous, conduct of the hop, weather, NORDO, recovery, etc., may all be modified due to the live missiles aboard the aircraft. For example, do local course rules require special departure or recovery procedures for live ordnance? And what about those divert fields – what are their live ordnance course rules and dearming procedures? Some aircraft emergencies will require external stores jettison, so this should be briefed.

Missile preflight should be explained, especially in shore-based squadrons not accustomed to carrying missiles routinely. But the single most crucial point to make at the brief is that safety is paramount. It may seem obvious, but it is far better to shoot no missiles and come home safely than it is to successfully shoot a Sidewinder at your wingman.

Arming procedures are normally well established. Follow instructions, especially the "hands-out" signal for stray voltage checks and safety pin removal. Remember that arming prior to takeoff may be a departure from normal habit patterns, with the resultant hazards. Pilots who routinely do things the same way every time are prone to foulups when this pattern is disrupted, so ensure that the last thing you do before takeoff is a complete takeoff checklist.

Once airborne, the exact conduct of the flight will depend on the type exercise to be flown, but safety precautions are very much the same for all missile shoots. There will be more than one shooter aircraft in the flight, and the most obvious danger is shooting down something other than the drone. This can be prevented by strictly adhering to a few basics. First, always know who is lead and who is wingman. This will be no problem on the initial vector but the lead may change during the run depending on weapon status, radar contacts, or flight leader discretion. Emphasize that all lead changes must be positively acknowledged over the radio. If you pass the lead and don't get a reply, transmit again until you do. Until then, don't

assume your wingy has heard you. If there is any doubt, a simple "I have the lead" (or "You have the lead") will clear it up.

Second, the wingman must stay out of the shooter's way. A good general rule to follow is always stay behind the wingline. It is incumbent upon the leader to know where his wingman is at all times, but realistically the wingman must realize that the shooter will be concentrating mainly on the drone. In fact, the shooter's concentration on that miniscule maneuvering bogey may approach a catatonic fixation; so, wingman, stay out of his way. Fly a position behind his wingline where you can observe the action but be close enough so you can readily assume the lead if you need to (or your leader lets you).

Make sure everyone understands the terminology that will be used. For example, the phrase "cleared to fire" – does this mean any shooter aircraft may fire, or only the aircraft presently in the lead? Does it mean Fox One and Fox Two, or must there be a separate "cleared to fire" for each missile? The meaning and action required for such phrases as "green range," "skunks in the water," "hot shot," and others may not be readily obvious. A phone brief with the controller the day of the exercise is the best way to resolve any last-minute questions.

Prepare for the emergencies that are unique to missile shoots. One of these is the misfire, meaning you pulled the trigger and nothing came off. Assuming (generously) that the switches were set up correctly, one of three things has happened. They are 1) the motor has fired but the missile didn't come off, 2) the gas grain generator has fired but the missile didn't come off, or 3) nothing. In the first case, there will be black smoke coming from the missile and the procedure is simple: jettison it immediately. In the second case, white smoke may be coming from the missile and it can be retained. In the second and third cases, the first thing to do is safe all switches, transmit "misfire," and get a vector to a clear area. Once in the clear, arm up the switches again and orbit for whatever period of time is specified. The theory is that if the missile doesn't fire during this orbit, it won't fire later. Safe up the switches, get a good check from your wingman, and return to base following local hung ordnance procedures. Common sense prevails in all missile shoot emergencies; anyone in the flight who senses an unsafe situation developing has the authority and responsibility to terminate the exercise with the appropriate radio transmission.

One more thing. After shooting a Sidewinder or rear-quarter Sparrow, pull up and to one side, out of the missile's flightpath. Missiles have a serious tendency to hit what they're shot at, and drones tend to come apart when hit by missiles. Following a missile into wreckage can ruin your whole day, so don't become the first Navy fighter to be bagged by a drone.

Air-to-air missile shoots provide fighter aircrews with realistic training that simply cannot be duplicated by simulations. Additionally, they provide the only positive method of testing the complete evolution from weapons loading to kill. A BQM is not a MIG, but for the time being, at least, it's the best we have. Brief it well and keep it safe and may all your Fox Two's be Bula-Bulas. ◄

I'm OK, You're So-So

By LT James M. Hunziker
HS-3

TOO many people live in their own little world and are generally satisfied to know that they do their job well. *(I'm OK.)* Each person's world is an entity in itself. However *(Catch 22),* no one's world is independent of all others; there is always an interface, a relationship, a dependency. When operating off a carrier, lack of this interface can easily result in tragic accidents.

Consider this. It's a dark night; you're the HAC of an H-3 on Spot 3 of a CVA, ready to launch. Primary clears you, and you execute a normal departure, establishing yourself at 300 feet, 80 KIAS. Suddenly your helo shudders; you see the cockpit lights and then the tail of an A-7 flash past your window. After an immediate landing, everyone in the readyroom wants to know what happened. You reply, "Some flathatting so-and-so . . . Primary cleared us to . . . no one told me . . . " But what actually happened was that as you left the deck, a *Corsair* waved off an ACLS approach on a different frequency. He narrowly missed a midair by diving for the deck. Center had control of the *Corsair,* and Primary had control of you. Each entity – the helo, the A-7, Primary, and Center – figured they were OK and that the others were at fault.

Try this one. Again you're the HAC flying the infamous starboard delta, plane-guard pattern. It's almost IFR and dark, a recovery is in progress, and you've intercepted the inbound radial. Suddenly, at 1½ miles you see a green light flash past the copilot's window. The tower answers your scream by advising you that the ship had turned 60 degrees port during the recovery of the last stiff wing. Also, Center was having trouble with the last aircraft on another frequency and forgot to advise you of the BRC (base recovery course) change. Each was "doing his thing." *(I'm OK . . . almost!)*

How about this? You were cleared by the tower to conduct ASW operations on the starboard side of the CVA. It was VFR; the wind was 120 degrees relative to the BRC. While conducting a normal sonar search, you hear a loud bang. After checking all instruments, what do your wandering eyes behold but a gaggle of *Corsairs* bombing the spar about 100 meters away at 8 o'clock. What happened? Well, the ship had turned 90 degrees starboard and cleared the attack aircraft in on the spar, but no one advised you.

Final example: It's a hot night, and you've been out for 4 hours on an ASW mission. You're under positive control of the CVA, and you're searching about 4 miles astern. Slowly the No. 2 firewarning light illuminates, and you note a rise in temperature in the cockpit. You depart the

hover, and a crewman reports a red glow at the exhaust cowling. A distinct, hot odor permeates the cockpit, and you direct your copilot to execute engine fire procedures. You switch to tower frequency and request a landing as soon as possible. You brief your copilot on the single-engine landing (luckily the carrier is headed into the wind), and the tower clears you to land.

You execute a perfect, single-engine, run-on landing and are amazed when the air boss queries you about your unscheduled landing. Somewhat confounded, you reply, "But, sir, I had an emergency." All you hear after that is "You had a *what?"* When you return to the readyroom, instead of being congratulated on a sterling performance, you are greeted by your skipper, CAG, and the air boss, all of whom have some very pointed questions to ask you.

Get the picture? Not that helicopter pilots tend to be forgotten by carrier folks, but that each principal in these incidents should have had "the big picture," constantly aware of the total environment. After all, that marks the true professional, doesn't it?

You were "doing your thing" according to NATOPS, SOP, and "the book." In your mind, you were OK, but were you?

It may be gratifying to be able to blame another for being in error. However, before you decide to solve the problem by blaming others, check yourself. Check your *attitude* altitude. Your attitude is the sum of maturity, experience, training, vision, and awareness. If any of these are out of focus, you may never get the big picture. ◄

NATOPS

By LCDR Frank A. Miley
VRC-40

Flight Schedule

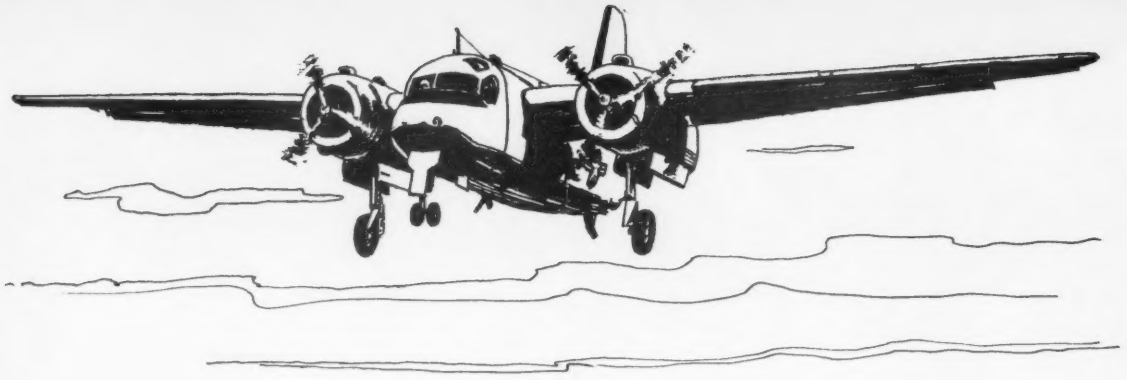
Pilot: CDR I. Senior
Instructor: LCDR Stan D. Ardize

Mission: NATOPS Check
Brief/ETD/ETA: 0900/1000/1200

HOW often have you checked the flight schedule just before quitting time and noticed your name on the flight schedule followed by NATOPS check? Undoubtedly, a thought occurred to you: "Good gosh, they can't do this to me! I haven't even taken my exams yet." So you do what the NATOPS officer has been after you to do for the past 60 days. You check out the open-book exam to take home that night (too bad your favorite TV show is on). You will also try to study for the closed-book exam which you will have to rush through in the morning when you come to work. After all, the flight isn't until 1000, and you get to work at 0800, so there will be plenty of time.

One of the problems with this plan is that by 2100 you will be sitting in your big easy chair with a full stomach, your NATOPS manual across your chest, and you – sound asleep. After all, we all know that the NATOPS manual is the greatest cure for insomnia that was ever introduced to modern man.

By the time you miss breakfast, fight the traffic, change clothes, confront the CO, and sit down to rush through the closed-book exam, you can see that by 0900 you are *not* ready for a NATOPS check. NATOPS exams can be taken 2 months prior to the date the NATOPS check is due. Unfortunately, it is very similar to visiting your friendly dentist; too many of us wait until the last minute.



Check

This scenario is probably all too familiar to many pilots. Unfortunately, many people go into a NATOPS evaluation with the wrong attitude. Too often, people think of it as a time when the NATOPS instructor plans to attack their values and skills and show the CO and the whole world that they really are not perfect performers. We have all heard many times that a NATOPS officer can either write an exam that no one can pass or give a check ride that no one can satisfactorily complete. However, this is definitely not his function. The job of a NATOPS instructor/evaluator is to be sure that everyone in his unit is *standardized.*

Anyone who dusts off the NATOPS manual once or twice a year in preparation for the NATOPS check is doing the entire NATOPS Program a great injustice. Those who constantly review NATOPS, discuss it, disagree with it, challenge its contents, and even quote it are the true professionals of the trade.

Let's discuss the NATOPS check itself. The NATOPS instructor has been selected very carefully by the CO for some very good reasons. The NATOPS instructor's responsibilities are too great to be given to just anyone. In my estimation, the NATOPS check is one of the most potentially dangerous flights we encounter. The reasons for this are many:

- Any flight we embark on has "x" amount of *actual* failures and emergencies that can occur. Added to this, a NATOPS instructor is going to throw in "y" amount of *simulated* emergencies to further complicate the situation.
- Personality conflicts, junior-senior relationships, and competitive atmospheres too often exist.
- It is very hard for many to avoid the battle of nerves or what we commonly know as "check-itis."
- Lookout doctrine suffers. The "checkee" is busy trying to keep an alert scan, including keeping an eye on the sneaky NATOPS puke. The "checker" is busy scanning the "checkee," making sure that his hands and feet don't pull or push the wrong controls or take the wrong actions. Thus the instructor has less time to check the airspace around him to prevent the aircraft from running into rocks, aluminum, trees, water, or inadvertent condensation.

Given these unique problems on a check flight, what can be done to neutralize the increased hazards?

The big secret to a successful NATOPS check flight is the brief. Let me mention a few items that should be covered during that brief:

- A brief should commence early enough so that the takeoff time and arrival times are met. This makes ops, maintenance, and the rest of the scheduled pilots happy. Also, it will allow enough time for the NATOPS instructor to conduct the required oral examination on the ground

instead of in the air. Remember, ATC doesn't like to repeat instructions because of long ICS cutouts.

- Weakness and misunderstandings on the exams should be cleared up, if they haven't been already.

- The role of pilot in command of the aircraft must be clearly understood. The NATOPS instructor may be in command or he may be the IP (Instructor Pilot). This is the place for all concerned to clearly understand what roles they play so that airborne wrestling matches can be avoided. This becomes especially important when a NATOPS instructor/evaluator is evaluating the CO, wing commander, flag rank officer, or even another unit.

- Discuss procedures for passing control from one pilot to another, passing the lead, and in what situations control is actually passed. For example: "In the event of an *actual* emergency in which I feel that I must take control of the aircraft, I will advise you over the ICS, shake the yoke/stick etc . . ." All too often, the NATOPS instructor/evaluator will listen to the checkee's procedures covering crew coordination during emergencies, but never discusses just who will fly and who will assist during an *actual* emergency or malfunction. The person being evaluated must know exactly what role he is to play if the instructor does in fact take control or takes the lead. This can help avoid too many hands raising and lowering wheels!

- The NATOPS instructor should go over his worksheet in order to cover every area to be evaluated, what simulated emergencies are to be covered, and when they can be expected. Example: "I will not be giving you any *simulated* emergency below 500 feet AGL, prior to V_r, etc. Any emergency you experience during this time, treat as an *actual* emergency and inform me over the ICS. You can expect *simulated* lost comm enroute or in holding, etc.; you can expect loss of navaids during one of your approaches, etc. . . ." This should eliminate any hesitation on the part of the evaluee as to whether he need abort, actually feather a prop or call for simulated feather, or shut down one of these precious motors when he least desires to lose one.

- Cover flight planning (DD-175, DD-175-1), filing procedures, aircraft acceptance procedures, aircraft preflight (part of oral exam), course rules, and squadron SOPs.

These items I have discussed are just a few of the areas that should be included in a good brief on every hop, but are often ignored or just taken for granted. They become mandatory on a check flight.

As you can see, the NATOPS instructor/evaluator is the key to a safe and thorough NATOPS check. It is his responsibility to plan a good, safe flight. He should know where he wants to go, what alternate plans are available, the weather conditions he is likely to encounter, and most important of all, have a clear understanding between himself and the evaluee. His responsibilities are many and varied, but that is why he is Mr. NATOPS.

The NATOPS evaluator should make every effort to try to get his evaluee at ease. An evaluee that is nervous and frightened is of very little value. How he reacts under stress can be evaluated in the air under well planned and logical *simulated* situations, and not on the way out to the airplane. Oh, yes, one more thing, Mr. NATOPS – don't forget to precede all of your sneaky *simulated* emergencies with the all-important words: "You have a *simulated* loss of so and so."

The NATOPS check doesn't *have* to be a dreaded, traumatic ordeal that is endured once a year to get your "check in the block." What it *should* be is a routine check of the professional procedures you use every day with the goal of ensuring standardization. But what the NATOPS check *must* be is well planned, thorough, and conscientiously approached.

Bravo Zulu

LCDR Larry Wahl
VA-146

Lieutenant Commander Wahl was on a practice bombing flight in an A-7E. Upon commencing his second run, power was reduced with no corresponding response by the engine. The run was aborted, various throttle positions tried, but movement of the throttle produced only a slight reduction of power from military to idle. At 18,000 feet, the engine with the throttle in the idle position produced 98 percent RPM, 575 TOT, 7500 pounds fuel flow, and an oil pressure of 37 psi. Increasing the throttle to military increased the RPM to 99 percent and fuel flow to 8000 pounds.

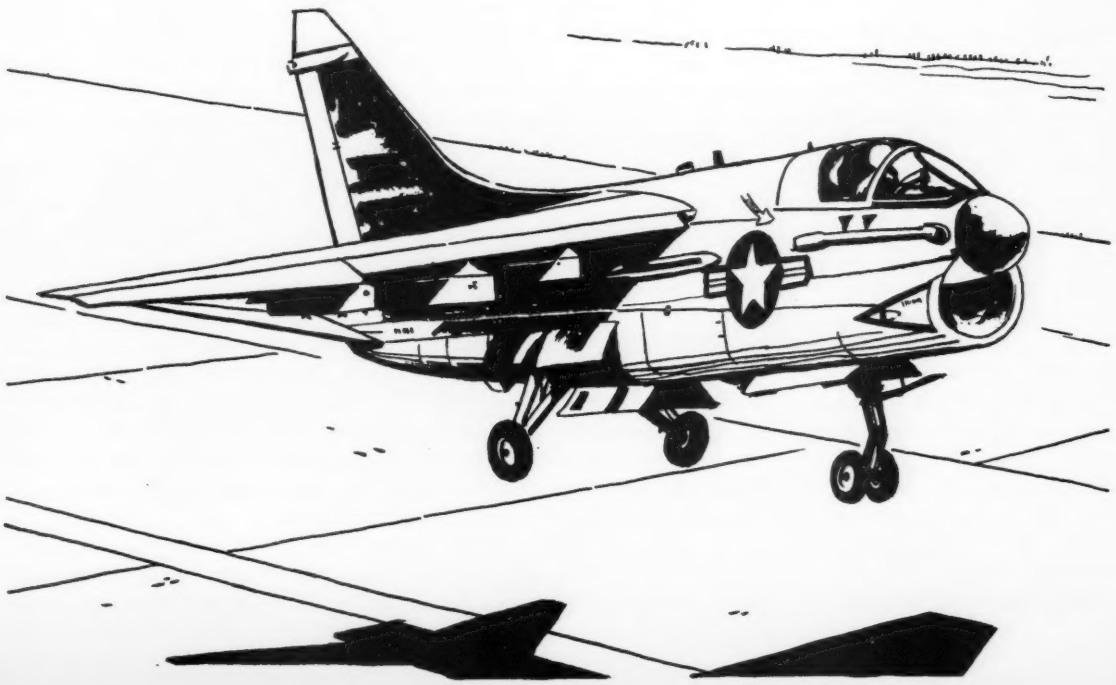
With good engine indications and 6800 pounds of fuel aboard, the decision was made to return to NAS Lemoore. Enroute, LCDR Wahl discussed the stuck throttle approach procedure with his wingman, and contacted the VA-122 base radio for assistance. Manual fuel was considered and rejected due to the unpredictable results that may have followed.

Overhead the field at about 8000 feet, the gear and flaps were lowered, EPP extended in OFF, and gear blown to utilize speed brake. Descent to approach altitude was made at 240 knots to set up a 6-mile straight-in at 300 feet AGL, 215 knots with full speed brake. At one mile with a centered ball, the engine was secured. The engine began to unwind immediately, but control response was good. The generator went off crossing the threshold.

Touchdown occurred about 1000 feet past the mirror at 135 knots. Braking and control response remained good down to about 80 knots. The aircraft came to a stop with 6000 feet remaining.

LCDR Wahl, by his skill and judgment, saved a valuable aircraft and prevented possible injury to himself.

Well done!



"The Navy is highly interested in improving the overall conditions within its commands, promoting individual command excellence, and increasing the satisfaction of personnel toward Navy life. Areas of particular concern include leadership, equal opportunity, race relations, training and utilization of people, motivation and morale, good order and discipline, communications, concern for people, drug and alcohol abuse . . . "

From the Navy Human Resource Management Survey

(It follows logically that the solving of these problems will greatly enhance command safety. – Ed.)

Human resources management

HUMAN error continues to be the leading factor in aviation mishaps. Aside from the obvious causes of human error such as alcoholism, drug abuse, illness, preoccupation with personal problems, negligence and immaturity, a significant factor is command climate. Supervisors can contribute to accidents by misassigning people to tasks which exceed their capability; by overworking people until they are fatigued; and by inadequately training, briefing, or coordinating the efforts of subordinates. Those mishaps where poor human resources management techniques were applied should be attributed to supervisory error.

Good management of human resources is often more important than good material or financial management. For example, an able commanding officer would not consider allowing an aircraft to be overstressed in flight, with resultant wing failure due to metal fatigue, yet men are often stressed and fatigued to the point of committing errors. These errors, even when they don't cause mishaps, require a greater amount of time to correct, thus introducing inefficiency into an operation.

The tempo of operations is often accused of placing undue strain on Fleet personnel. The "on-again, off-again" pace of responding to last-minute changes seems to be common practice in many Fleet operations. Planning by higher echelons of command should include proper scheduling in order to maintain steady progress with well-defined goals. For example, by scheduling maintenance at well-spaced intervals, less strain is placed upon maintenance crews.

Many accidents attributed to carelessness in reality reflect poor management. When subordinates are thwarted in their attempts to achieve some measure of satisfaction in their work, pride in performance deteriorates. This leads to carelessness and shoddy workmanship. Instilling a sense of pride in craftsmanship and achieving some degree of job satisfaction are necessary steps in the prevention of careless mishaps. Skilled technicians should be allowed to work with reasonable independence and without constant interruption by nonrelated duties.

Current management theory assumes that: 1) It is human nature to want to expend energy, 2) Stringent external controls are not the best way to ensure the performance of a good job, 3) People want to assume responsibility, and 4) Many people are creative.

Instead, actual practice seems to indicate that many supervisors feel it necessary to apply coercive measures. They assume that people have little ambition, avoid responsibility, and need someone to constantly tell them what to do. In so doing, they overlook the importance of respect and self-esteem as motivating factors. Under such conditions, only a portion of human potential is realized.

In order to foster pride in the Navy and professionalism on the job, all management levels need training in human resources management. This training should include an understanding of attitudes, motivation, and interpersonal relations, including respect for the individual's needs, aspirations, and capabilities.

Many supervisors don't realize that their own attitudes can adversely affect safety by inducing risk-taking behavior, either through setting a poor example or through provoking

destructiveness in frustrated juniors. A subordinate's frustrations, brought about by lack of opportunities to show what he can do, by unfair treatment from a supervisor, or by racial tensions, can result in his causing subintentional accidents that stop short of suicidal impulses or sabotage.

Use of modern management techniques, such as participatory management or some modification thereof, should be encouraged. In participatory management, the lowest levels of command are consulted on their ideas, feelings, and contributions to safety programs. This technique is being applied in many commands through the enlisted safety committees.

Often commanding officers "inherit" personnel problems of which they are unaware. A general lack of communications keeps the skipper in the dark about what his people really think and how they feel about their work, their supervisors, and the command. Without this knowledge, poor decisions affecting personnel morale are frequently made, jeopardizing performance and safety. A management tool which would inform the CO about these problems is needed.

The Navy has developed a questionnaire technique to provide management information to COs regarding their people problems. Navy HRMCs (Human Resource Management Centers) respond to requests from type commanders for confidential management surveys scheduled during a unit's regular Human Resource Management Availability period. The responses on these surveys enable COs to pinpoint problem areas and take action to utilize human resources to their fullest potential.

Questionnaires are administered by HRMC teams in all

as an accident prevention tool

By Robert A. Alkov, Ph.D.
Naval Safety Center

departments within a squadron, ship, or other unit, and answers obtained on an anonymous basis. Individuals are not identified on the forms and are not required to sign their names. Responses to the questionnaires are processed by computer at the HRMCs, and graphs and charts are drawn which outline personnel strengths and weaknesses within various shops and work centers. The confidential results are made available only to the CO and his staff. It has been found that units which score high in such areas as organizational communications, interpersonal relations, and supervisory leadership have low disciplinary problem rates, high retention rates, and generally do well on ORIs.

The questionnaire is designed to uncover problems in interpersonal relations, problems between supervisors and subordinates, interracial tensions, alcohol- and drug-related problems, and the individual's overall view of his command and its policies. The answers reveal to the CO much about his unit's morale, *esprit de corps,* pride, and job satisfaction. These factors influence retention, work efficiency, and safety.

Several of the questions on the form bear indirectly on safety. These items relate to the way an individual perceives his relationship with the command, his peers at work, and his immediate supervisor. Such things as adequacy of training and the command's willingness to listen to his ideas and suggestions are addressed. Other items reflect the command's concern for his welfare in scheduling and organizing work activities to minimize fatigue. Also assessed is the individual's own motivation to contribute to the command's mission and goals and the performance of his work group in planning and working together.

Unit COs are given the option of including a block of 30 questions of their own design to answer specific questions about problem areas with which they are concerned. More and more squadron COs are using these optional questions to ask about safety-related matters.

Most of the questions related to safety that individual commands are asking are related to discovering how the individual perceives his squadron's safety organization and its programs, his own attitude toward safety, and the extent to which he feels pressured to shortcut proper procedures to get the job done. Questions are also designed to assess the individual's ability to recognize and correct hazardous conditions.

The charts and graphs of the responses to these questions reveal some specific problem areas to a CO. For example, a recent survey uncovered a problem of which the command was unaware. The middle management level (CPOs and JOs) felt that workload and time factors were not being adequately considered in planning work group assignments. The old "can-do" attitude prevented them from griping to department heads about this problem, but it came out in the anonymous survey. All enlisted pay grades and junior officers felt they were out of touch with higher echelons in the unit.

In the optional question block, the CO found that there was little awareness of the goals and programs of the unit's safety organization among the enlisted men and JOs. Also, the lower pay grades felt that they were encouraged to shortcut proper procedures to get the job done. An analysis by divisions pinpointed the problem as especially acute in the powerplants division. Further investigation uncovered a significant issue. An engine bulletin was published which required inspection of engine struts for cracks and removal and replacement if found. Small cracks were discovered by diligent squadron personnel and reported. A decision to fly the aircraft was made by maintenance control based on the bulletin, size of the cracks, and need to fly. The decision criteria were never communicated to work center personnel, however. Therefore, they had the feeling that in spite of their efforts and diligence, the results were being ignored and proper procedures were greatly "short cut." The resulting deterioration in morale, motivation, and job satisfaction was alleviated by improving communications and information exchange up and down the chain of command.

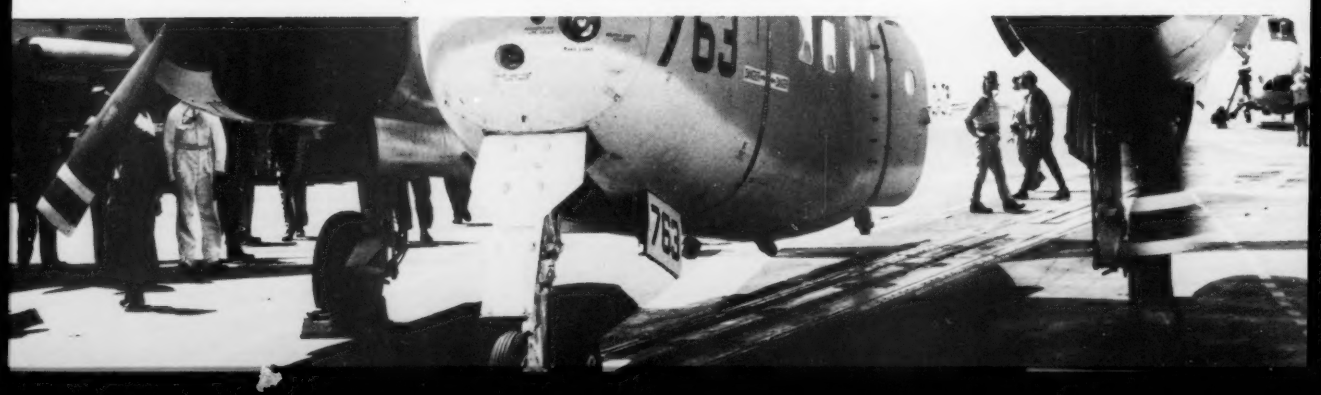
The use of the Human Resource Management Survey as an accident prevention tool should enable squadrons and units to improve their command climate and bring down the overall Navy accident rate substantially through the process of the command getting to know the individual better and motivating him to achieve these accident prevention goals.

An up-to-date, sophisticated Navy can no longer afford to ignore modern management principles. The era of "iron men and wooden ships" discipline is over. The all-volunteer-forces concept affording equal employment opportunity to people regardless of race or sex demands a more enlightened approach to personnel supervision. Navy human resources management principles ultimately affect recruiting, retention, on-the-job performance, and safety. In these days of dwindling resources, management can make or break the Navy. With flexibility, adaptability to changing conditions, and a heightened awareness concerning people and their problems, the United States Navy will be around to protect our nation's vital interests for another 200 years.

The all-volunteer-forces concept affording equal employment opportunity to people regardless of race or sex demands a more enlightened approach to personnel supervision.

Examples of supplemental questions relating to safety used by aviation commands in the optional block of the Human Resources Management Survey:

1. To what extent does the safety organization act to promote and ensure safe operations in your work center?
2. Do you feel that your superiors are genuinely interested in your personal safety?
3. To what extent do you feel that the squadron's overall safety program is effective?
4. Do you know who your safety petty officer is?
5. I am familiar with the functions and duties of the squadron safety petty officers.
6. How well do you feel your safety petty officer is performing his duties?
7. I am aware of the purpose and mission of the quality assurance and CDI inspectors.
8. I am familiar with the squadron procedures for reporting an unsafe situation.
9. To what extent do you feel you are capable of recognizing and correcting an unsafe situation?
10. To what extent does your supervisor insist on the observance of safe procedures in the performance of your duties?
11. To what extent do you observe your supervisor in unsafe practices?
12. To what extent is your work inspected by others to ensure that it has been done properly?
13. To what extent are safety procedures covered in your training?
14. To what extent do you feel pressured to accomplish your work by shortcutting proper procedures?
15. To what extent do you refer to technical publications in the performance of your duties?
16. To what extent do you read safety publications such as APPROACH, MECH, and weekly and monthly safety bulletins?
17. To what extent are the above mentioned safety publications made available for you to read?
18. To what extent do you feel that training time is being used effectively?
19. To what extent do you feel that your squadron's tool control program affects tool accountability?
20. How effective are your squadron's safety standdown programs?



Letters

Unbelievable Performance

NAS North Island – The telemetry trace of the spin profile of the British *Hunter* as published in the APR '76 APPROACH ("Spin/Departure Training: A Must!") reveals that it is a most impressive aircraft. Not only did it exhibit a rate of climb of 400,000 feet per minute (14.5 to 17.5 seconds) at an indicated airspeed of less than 150 knots, but it apparently suffered no damage when it descended to an altitude of -4000 feet (32.2 seconds).

CDR Art Adams (Ret.)
ATC Specialist

• We wondered how long it would take our readers to identify our mistake – as usual, not long. The readout labeled "Altitude" in the telemetry trace should have read "Yaw rate," with yaw rates displayed left (up) and right (down) in degrees per second. The original trace received from the author, LCDR Honour, had to be reproduced by hand, and in the process, the labels were transposed. Our sincere apologies to the author, and our congratulations to astute readers who picked up the error.

Needs Alcohol Education

NAS Norfolk – I believe that LT Thompson was trying to be humorous in his article on physical fitness in the APR '76 APPROACH. His ideas on exercise aren't bad, but to reward each sport with alcoholic beverages indicates to me that perhaps instead of talking to his flight surgeon or physician about a PT program, he should be talking with his squadron collateral duty alcohol counselor or drug and alcohol program advisor about some alcohol education.

AMSC R. F. Disney
CODAC
Tactical Support Wing ONE

• LT Thompson's lighthearted approach to physical fitness was intended to encourage exercise, not drinking. The purpose of the TCO chart was not to use beer as a reward, but to indicate the relative exercise value of various sports, measured against a caloric standard to which many readers could relate.

LSOs: Save Your Eyes and Ears

USS LEXINGTON – In response to editorial comment on letters received in response to LSOs and standard flight deck gear, you replied: "Ears are not worn because LSOs need to hear aircraft power changes to assist them in analyzing aircraft glide slopes . . . " While this may be true, LSOs, as well as all other personnel on or in the near vicinity of the flight deck definitely need some form of sound attenuating devices to protect their hearing. Everyone can learn to "hear" power changes and other variations in sound levels through practice, even with proper sound attenuating devices in use. If they do not acquire this ability for hearing, they may in the future not be able to "hear" anything!

As far as eye protection goes, the same statement can be quoted – if eye protection is not worn, they may not be able to "see" the aircraft in the future!

I would encourage all LSOs and their observers on the platform to at least wear eye protection and sound attenuators of some sort while on the LSO platform. It will save you grief and the medical officer's time in removing nonskid and other foreign objects from your eyes. It will also at least help reduce the probability of hearing losses.

LCDR R. A. Marcom, MC, USNR

Re "Disastrous Bingo"

Alexandria, VA – In reference to "Disastrous Bingo" in the JAN '76 APPROACH, some omissions either in the article or the incident are glaring. Although it's been 5 years since I was current, and a CV NATOPS isn't handy, my memory says that all departing aircraft – bingo or otherwise – switch to Departure Control. Even if communications difficulties preclude switching, CATCC still takes control. Everyone else can go zip-lip if necessary in an emergency.

The reasons are well founded: radar tracking, tanker control/rendezvous, control of other aircraft at altitude that can attempt divert field contact, later divert field bearing/distance/weather than is available to the tower, and control of airborne E-2s. The transmissions mentioned and the general tone of the article smack of too much air boss control. The air boss and his limited staff are badly overworked with the VFR pattern and the launch and landing deck operations, while CATCC has a staff trained for a bingo effort.

And lastly, when will we ever learn to use the tankers? At the very least "tank enroute is possible."

CDR T. E. Monton

• Why so many problems come out of bingo situations when they should be planned by-the-numbers evolutions is hard to say. Every year we lose one or more aircraft due to various bingo evolutions, and nearly every loss is AVOIDABLE.

APPROACH welcomes letters from its readers. All letters should be signed though names will be withheld on request. Address: APPROACH Editor, Naval Safety Center, NAS Norfolk, VA 23511. Views expressed are those of the writers and do not imply endorsement by the Naval Safety Center.

Re "Control Aircraft or Scrape Paint?"

FPO, New York – Your FEB '76 issue was very interesting, particularly the article on "Control Aircraft or Scrape Paint?" by AC2 L. F. Press and the Anymouse feature "Going Above Glidepath . . . "

I wonder just how far all our Navy training has to go or if we are doing something wrong in maintaining expertise. How much do two F-4s cost? How about two pilots and two RIOs? I agree in part with AC2 Press; we sure waste a lot in yard periods.

AQC Robert Daniel
IM3 Shop
USS SARATOGA (CV 60)

Pitching Helicopter

Sandston, VA – In the FEB '76 APPROACH, "A Swinger Blows the Job" concerned a helicopter accident that occurred during a compass swing. One of the sentences was: "NATOPS addresses the problem. In the event the wheel brakes bind or lock or the helo is taxied into a hole . . . the nose will pitch down and an immediate liftoff may be required to prevent damage to the aircraft."

I hope that this is only a partial quote of the NATOPS answer. Having flown helicopters for a number of years, I can appreciate the problem this crew encountered. I have personal knowledge of an incident that turned into a major accident because the pilot tried to lift off after one of his wheels fell into a hole. The problem was that his wheel was stuck in the hole, and when he tried to lift off, the helicopter rolled over in the direction of the stuck wheel and crashed. I am hoping that the Navy tech orders on wheeled helicopters has a warning, as the Air Force does, stating that if your wheel becomes stuck in a hole and an attempt to take off is made, the possibility exists that if the wheel does not become unstuck, the helicopter may roll over on the side of the stuck wheel.

I suggest that when landing a helo in an area when the possibility of a wheel falling into a hole exists, a crewman be stationed in a position to observe the wheels, to aid the pilot in his touchdown. If a wheel starts to fall into a hole, collective should be increased slowly to prevent further descent into the hole, and liftoff should not be attempted until a crewman can fully determine the severity of the problem.

Maj Richard C. Tobin, USAF
USAF Liaison Office, Virginia CAP

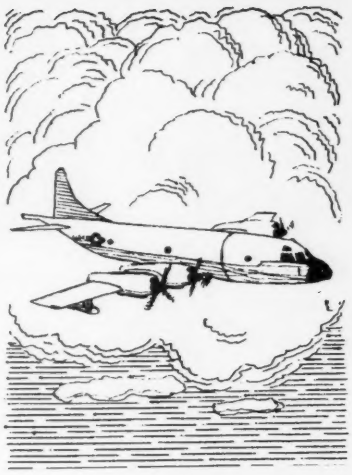
• You are correct in describing *two* potential problems affecting helicopters, both wheeled and skid types. The lesser of the two is a hole in which pitch is the problem, and as NATOPS suggests, an immediate pickup may be the only way to avoid damage. The more dangerous of the two conditions, however, is the possibility of sticking a wheel or skids and by increasing collective start dynamic rollover. NATOPS addresses the phenomenon of dynamic rollover in most Navy and Marine manuals. Furthermore, when conditions permit, it would be prudent for a crewman to be offloaded to check for obstacles whenever a rough area landing is attempted.

Use the NFO

Columbus, OH – The article "Radar-Directed Routing and Terminal Arrival Depiction" appearing in the MAY '76 issue was well written and identifies a safety of flight principle that is common to all communities of aviation. The most critical time of any flight involves the transition from enroute airways through approach procedures to a safe landing.

While on exchange duty with the RAAF (flying P-3s), I was exposed to a safety practice which to my knowledge is not practiced in USN P-3 squadrons – and should be. Besides using the copilot as a backup pilot and safety observer, the RAAF squadron fully used the services of the navigator. He monitored all ATC transmissions, followed the pilot's approach on his own set of charts, and continually kept the pilot informed of minimum safe altitude and emergency safe altitudes throughout the descent and approach. Such procedures have allowed the Maritime squadrons in Australia to maintain a perfect safety record.

Our NFOs are now required to become instrument qualified, and with the mission commander concept, are even more responsible for safety of flight. Every



qualified person on an aircraft should be used to back up arrival procedures and all other safety procedures. I'm certainly not condoning controllers vectoring pilots into the unknown, but ultimate responsibility still remains with the pilot. Among the available options to ensure safety of flight are the professional services of his NFO. I certainly will use the navigator for his full services in my next P-3 squadron tour.

LCDR D. W. Kanning
Navy Recruiting Area Four

• You have an excellent point. It appears, however, that at least one P-3 squadron in the USN is following the procedure that you have suggested. See "Approaches Are for Navigators, Too," FEB '76 APPROACH.

Suggestion

FPO, New York – The portable, walkaround oxygen bottles for crew stations 9 and 10 in the P-3C are currently stowed on the afterside of electronics rack F-2. In this location, if any one of the three pressurized sonobuoy chutes should backfire and blow the breech, or the Cad separates, these shatterproof bottles could become a missile hazard when the valve stem is knocked off.

To rectify this situation, I recommend these bottles be relocated within the aircraft, possibly stowed adjacent to the ditching stations involved.

AO2 R. J. McDonald
VP-16 Ordnance

• It sounds like a good idea to us. How 'bout submitting a Safety UR on this to start moving officially?

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A Naval Safety Center Publication

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PRINTING/Issuance of this periodical approved in accordance with Department of the Navy Publications and Printing Regulations, NAVEXOS P-35. Library of Congress Catalog No. 57 60020.

CREDITS/The McDonnell Douglas C-9B *Skytrain II* is featured on this month's cover commemorating our nation's Bicentennial. The original was painted in oil by McDonnell Douglas artist R. G. Smith. **IFC-3** Photos: Courtesy VP-22.

★ U.S. GOVERNMENT PRINTING OFFICE: 1976—635-273/19

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HELICOPTER HANDLING AFLOAT

ORDINARILY, most people are more cautious working at night than during the day. This, however, isn't always true. A job that is performed time and again during daylight hours is often attempted at night when visibility is hampered, but without too much thought to existing hazards.

Aboard an LPH recently, a mishap occurred under these same circumstances with decidedly costly results. Here's what happened:

A CH-46 returned from a night mission. After landing, the blades were folded and the aircraft was secured. The helicopter was tied down on spot 2, ship antennas were raised, pri-fly and the flight deck secured, and deck lights extinguished.

A short time later, word was passed to the crew chief to spread the blades and leave them untied to prepare the helo for standby condition. Now, spreading the rotor blades on a helicopter under most conditions is no big deal. It just so happened, in this case, it *was* a big deal. As the blades were spread, the aft red blade contacted some guywires on an antenna adjacent to spot 2.

The wires prevented completion of the spreading cycle, and the blade fold motor continued to operate. This damaged the pitch varying arm, the blade fold drive linkage, the gear and absorber, the bonding of the trailing edge of the blade, and possibly the blade fold motor.

There were two reasons for the damage. The area was not properly cleared prior to commencing the spread cycle, and no one was stationed to watch the unfold sequence. The inability of the crew chief and the flight line section leader to see what was happening (because of the darkness) turned a routine job into a ground accident.

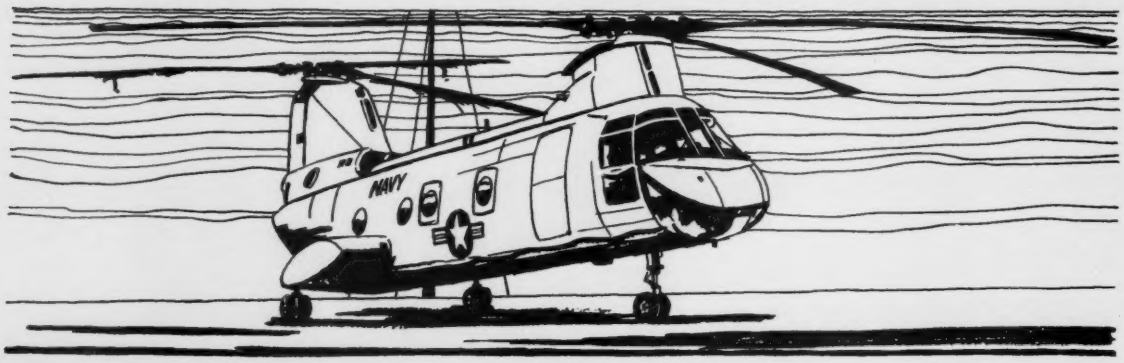
The CO commented on the lack of supervision and ordinary precautions which should have been taken. He also commented on the good fortune that this time the antenna was not an operating transmitter antenna. Something like that could really fry a guy.

Under most conditions afloat, regardless of the ship, any deck evolution involving helicopters is more critical than the same evolution ashore. Work must be accomplished on an unsteady platform, winds across the deck are generally far in excess of winds ashore, clearances are usually pretty tight, and in many instances, one-man jobs routinely accomplished on the beach become too much for one man to handle.

The September 1972 APPROACH contained an article, "Skid Operations Aboard the AMPHIBS," written by members of the Air Department of INCHON. In it, the authors stated, "High winds and heavy seas in the Mediterranean during winter months were found to be the rule rather than the exception. Steady state winds of 50 knots with higher gusts were frequent during November-January . . . " The authors went on to report the extra precautions necessary to move helicopters, as well as hazards involved in rotor blade engagements and disengagements.

Flight and hangar deck officers, supervisors, directors, and deck hands all must recognize these differences afloat and make allowances for existing conditions. For example, SOP can be followed to the letter, but crunches and ground accidents occur because extra hands were not used when sea state/winds/clearances demanded it.

First things first! At night, this means an extra-careful look around before performing maintenance or moving aircraft. ◀



1776-1976

The uniform has changed but one thing remains...

SAFETY

Idea submitted by AZ3 T. W. Woodman, HS-3.